



ICT & Smart City



Ministry of Science, ICT
and Future Planning

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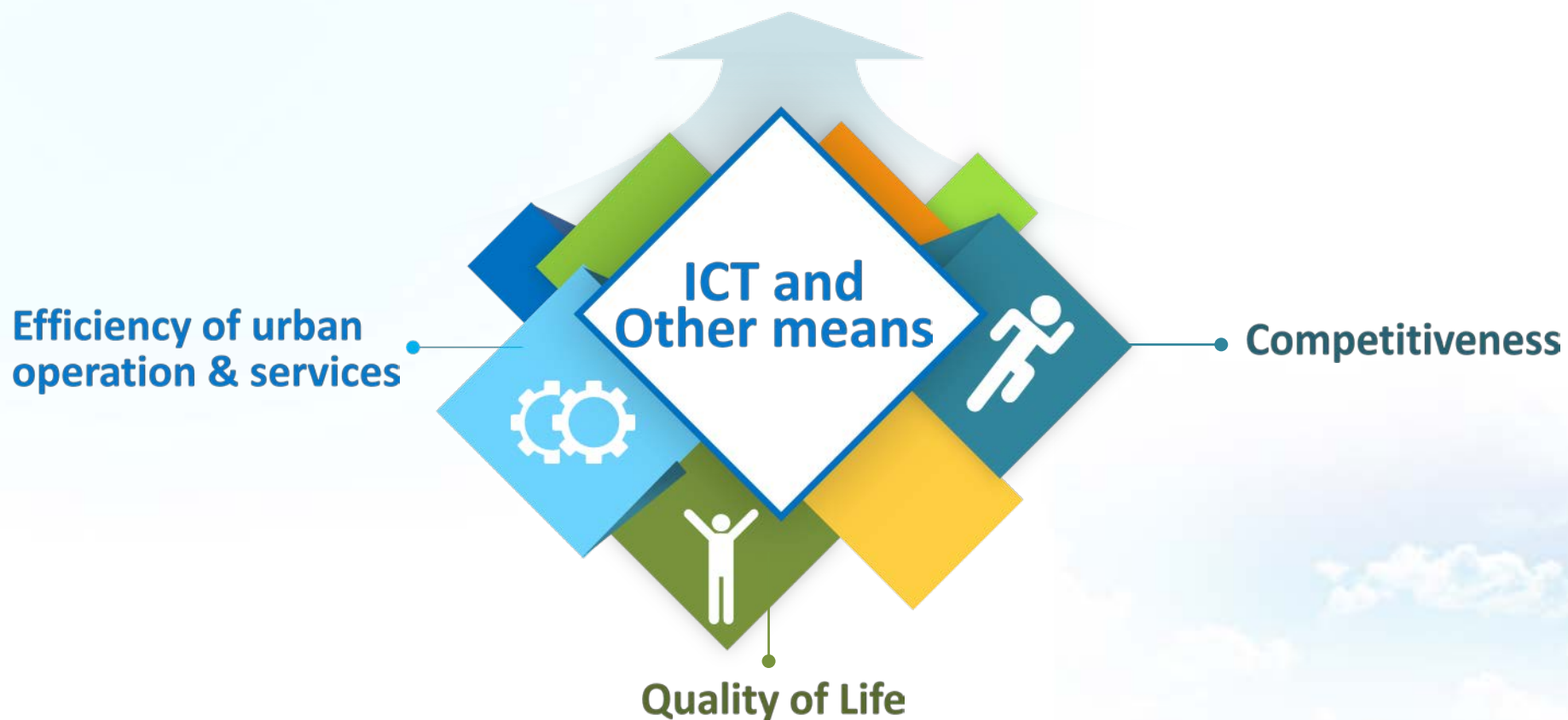
What is Smart City ?



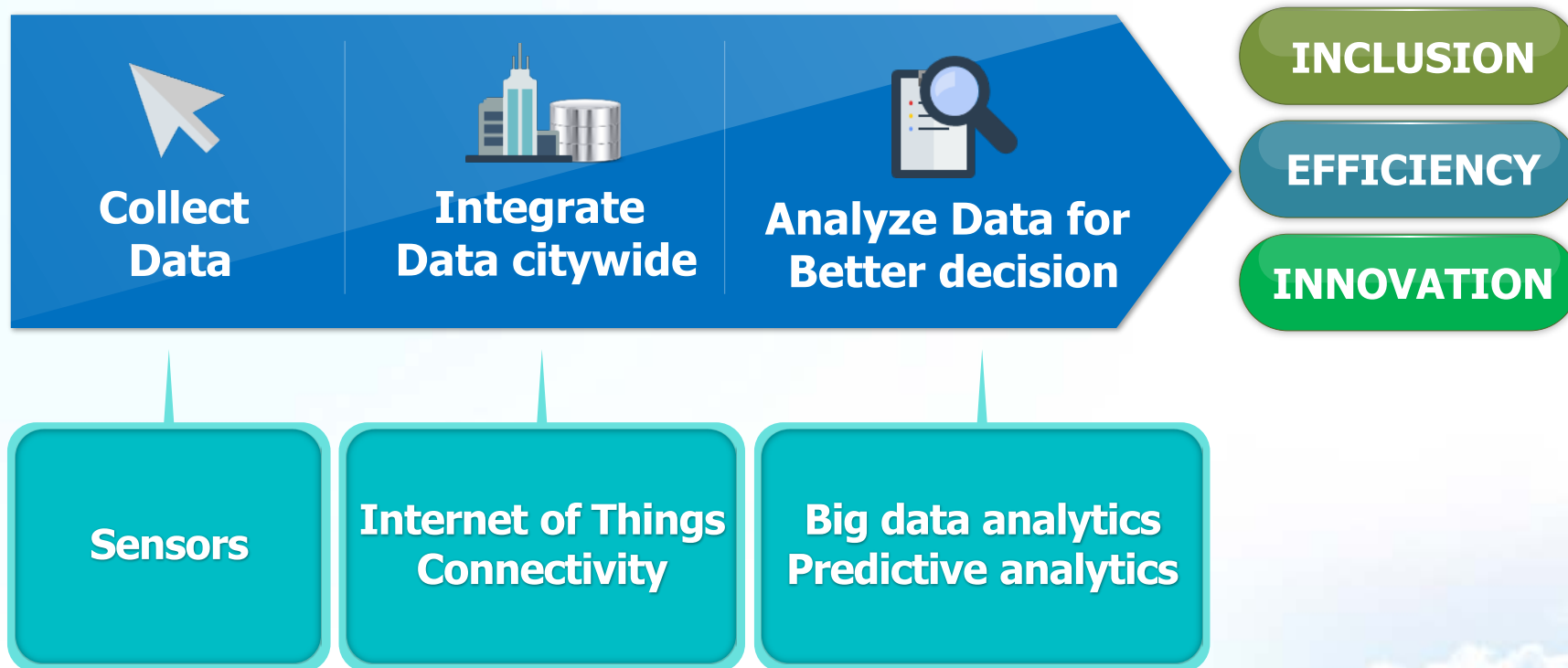
- ITU
- World Bank
- Frost & Sullivan
- Summary



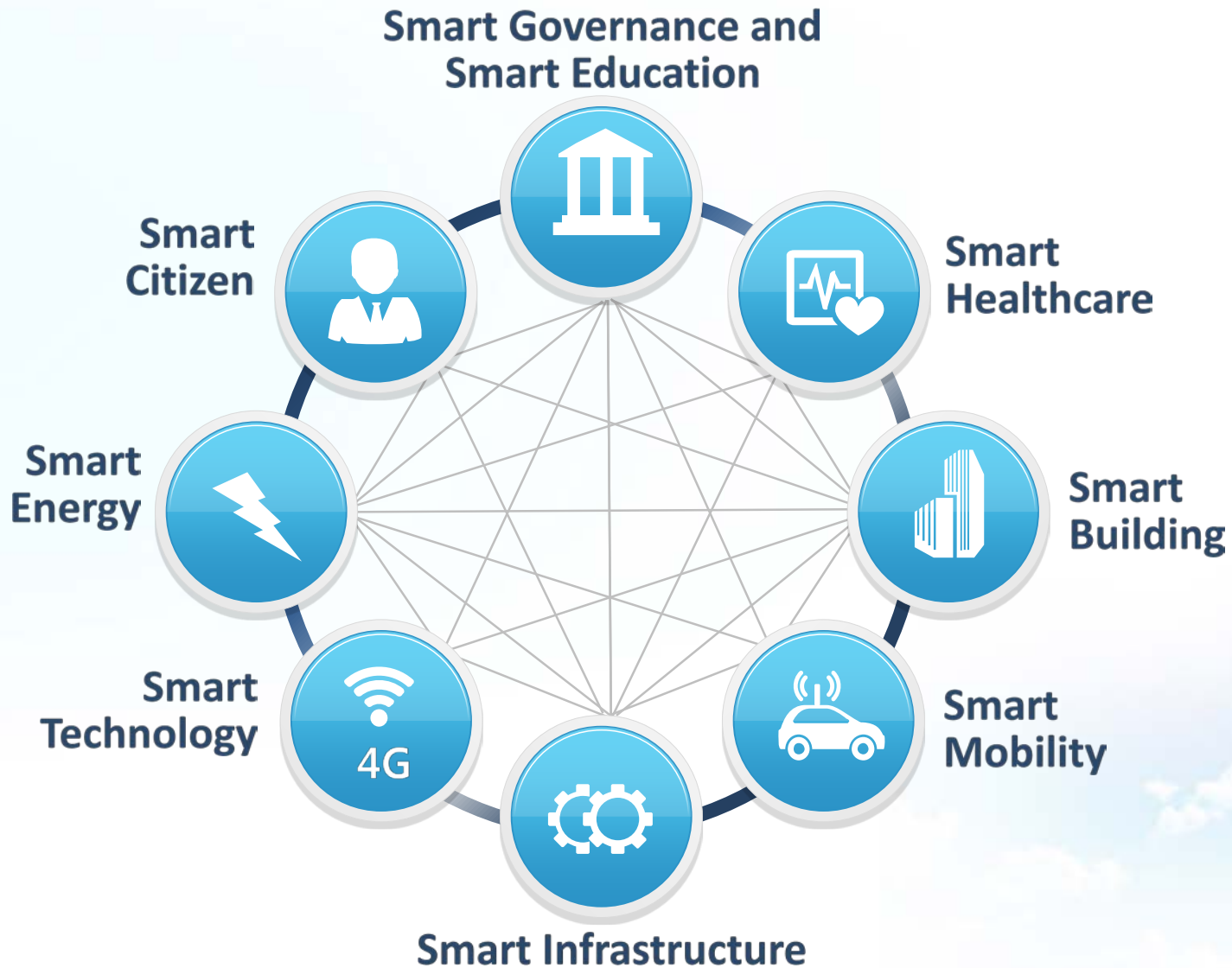
The needs of Present & Future Generation Met



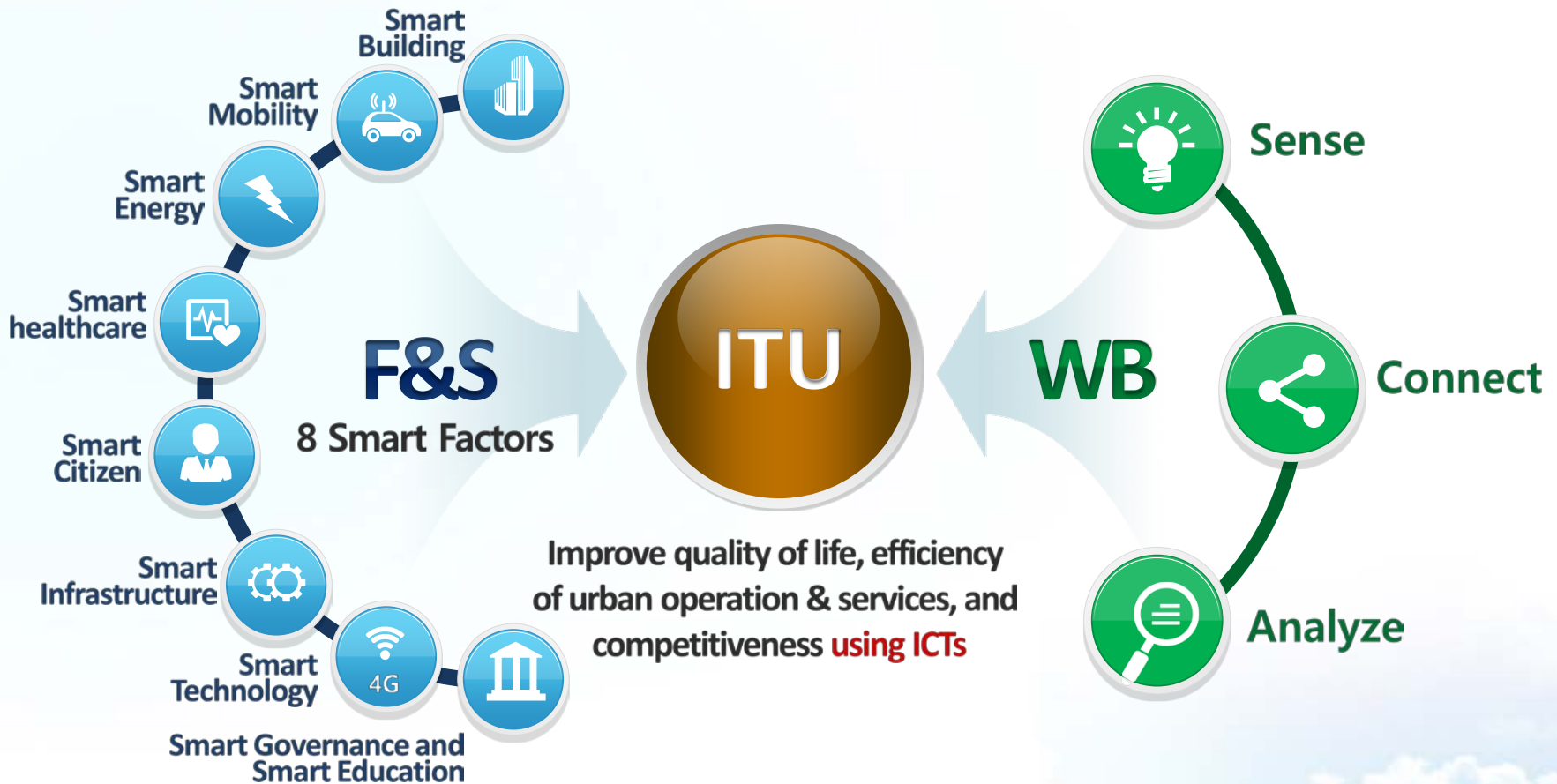
World Bank : Smart City



Source : World bank 2016 World Bank. 2016. World Development Report 2016: Digital Dividends



Summary



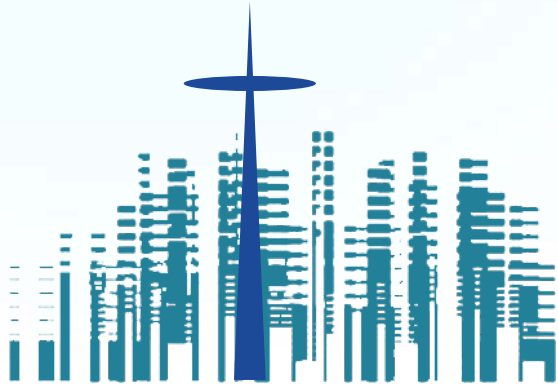
Smart City

Urban development vision to integrate multiple ICT solutions to manage a city's assets



Why

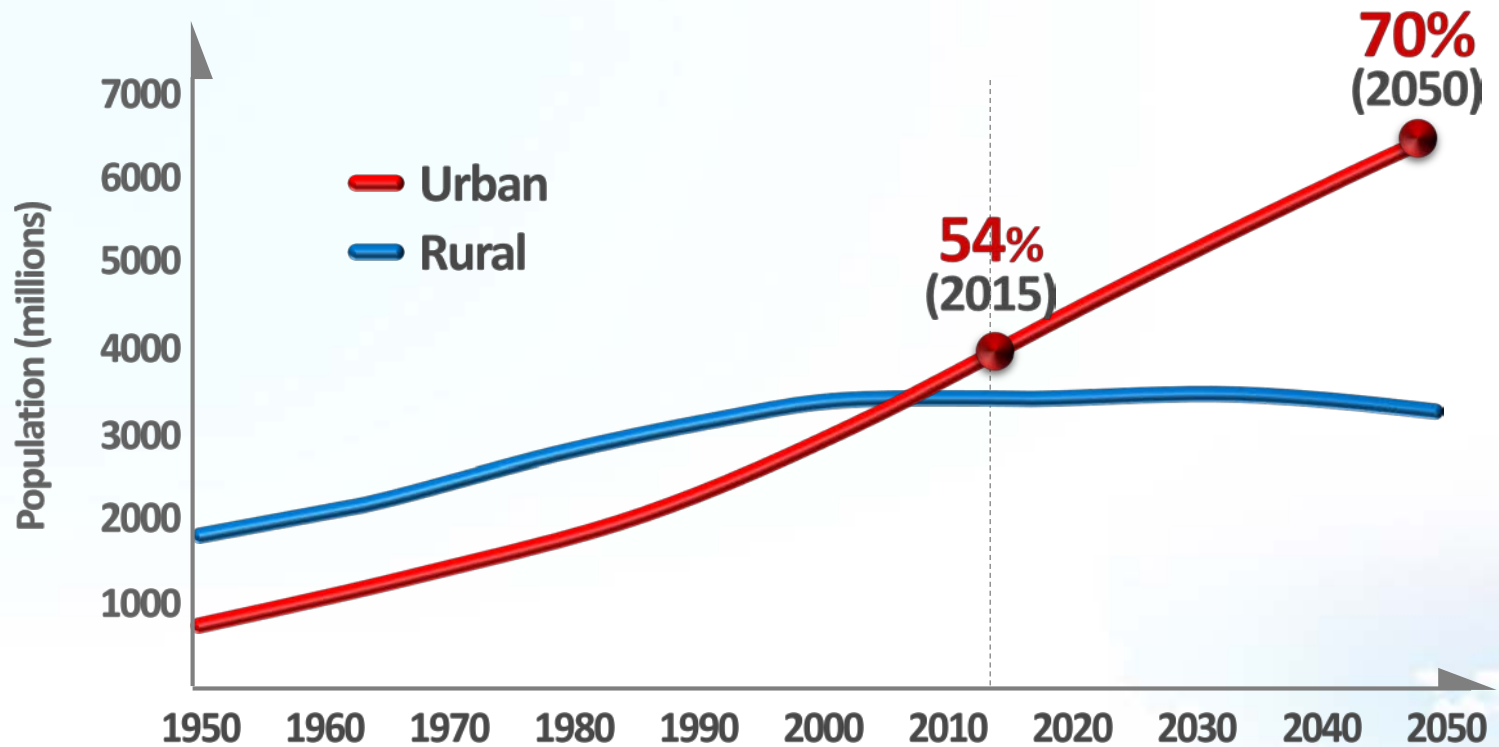
Smart City ?



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Rapid Urbanization

Urban and rural population of the world, 1950~2050



Source : UN (2014), "World Urbanization Prospects", 2014.

Challenges of rapid urbanization



Source : ITU, a image from <https://gijbertkoren.wordpress.com/>

Challenges of rapid urbanization



Urban Density

Two-thirds of the world will live in cities by 2050.

Mobility

People are moving more into congested centers, with urban travel to triple by 2050. Traffic congestion could bring cities to a standstill.

Energy Sustainability

Global demand for energy will rise by up to 37% by 2035.

Smart city as a solution



Source : ITU, a image from startupbootcamp program: Smart City & Living

Benefits of Smart City

○ Examples of saving in a city with a population of 200,000 inhabitants:



Smart Parking



**Smart Waste
Management**



**Smart Water
Management**



Smart Lighting

Source : Telefónica IoT Team

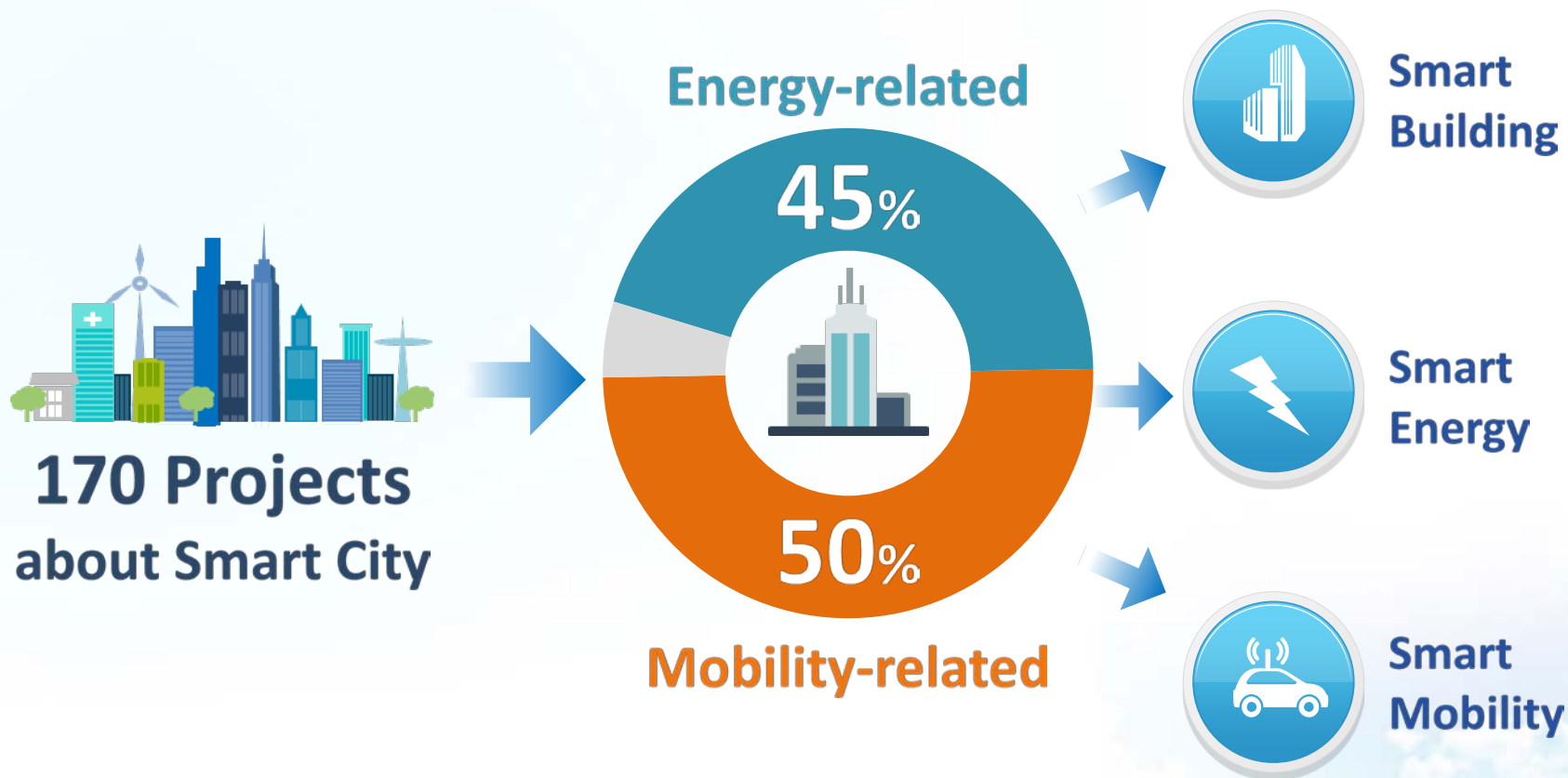


Key aspects of Smart City:

- Building
- Energy
- Mobility

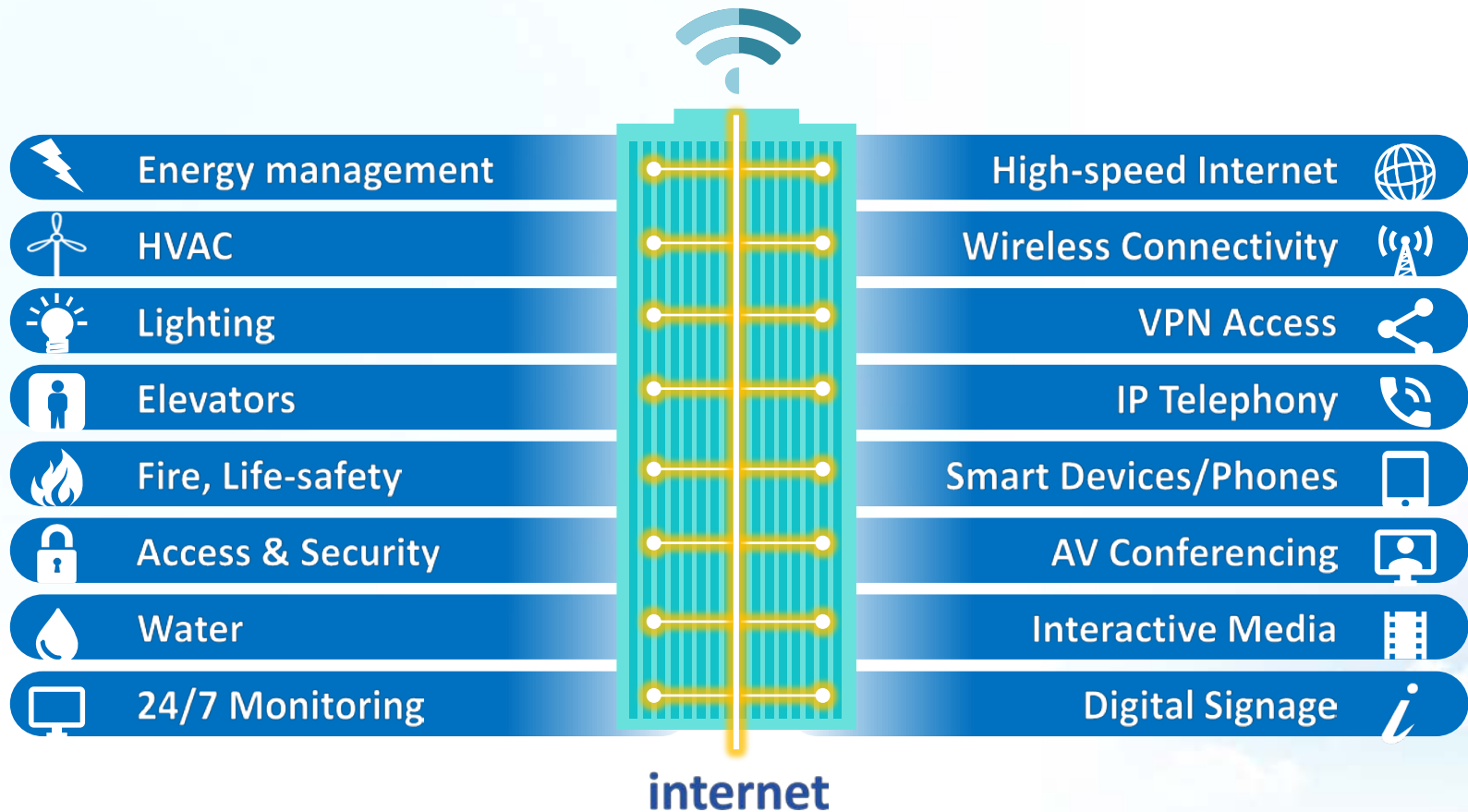


3 Key aspects

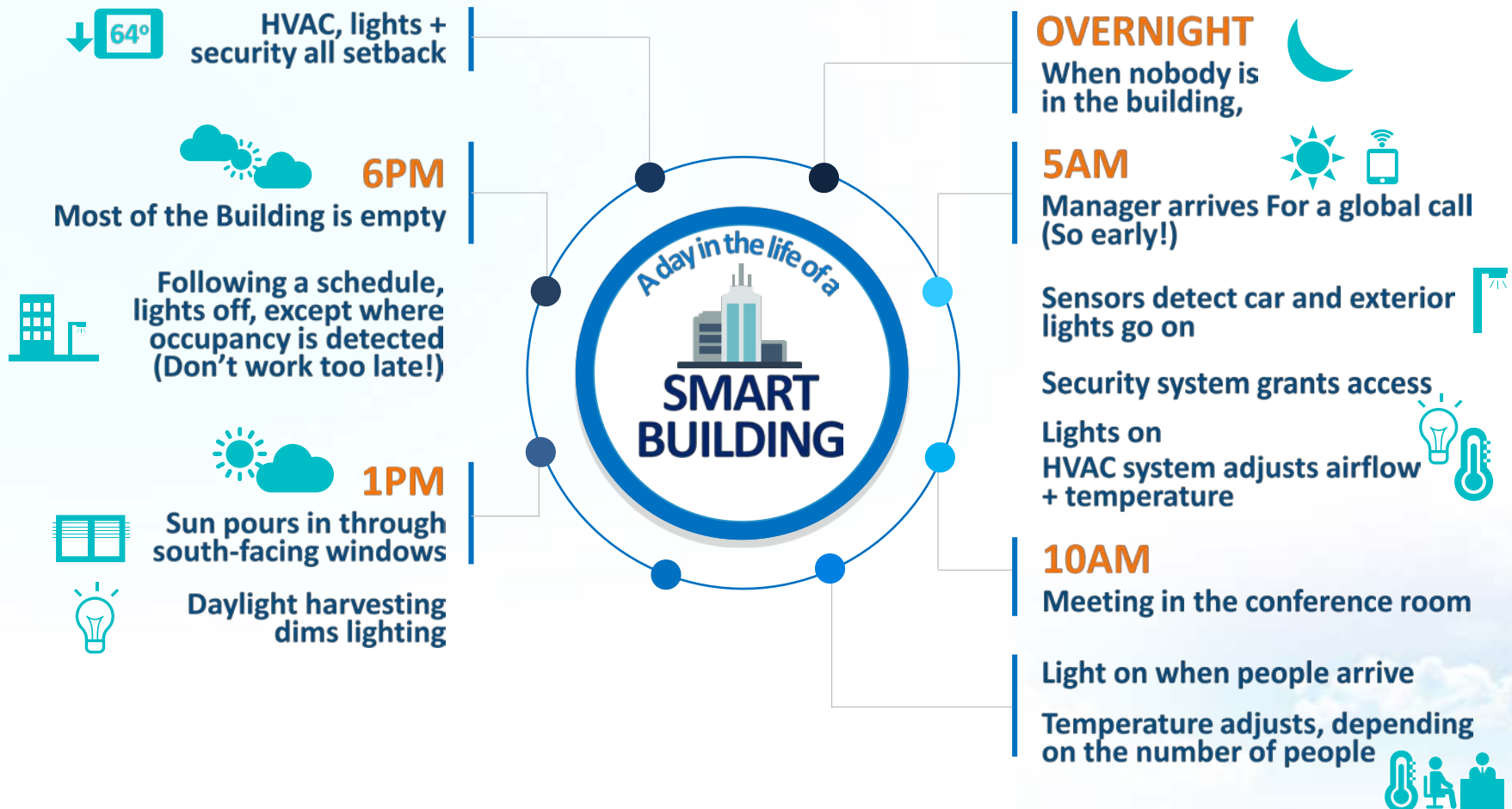


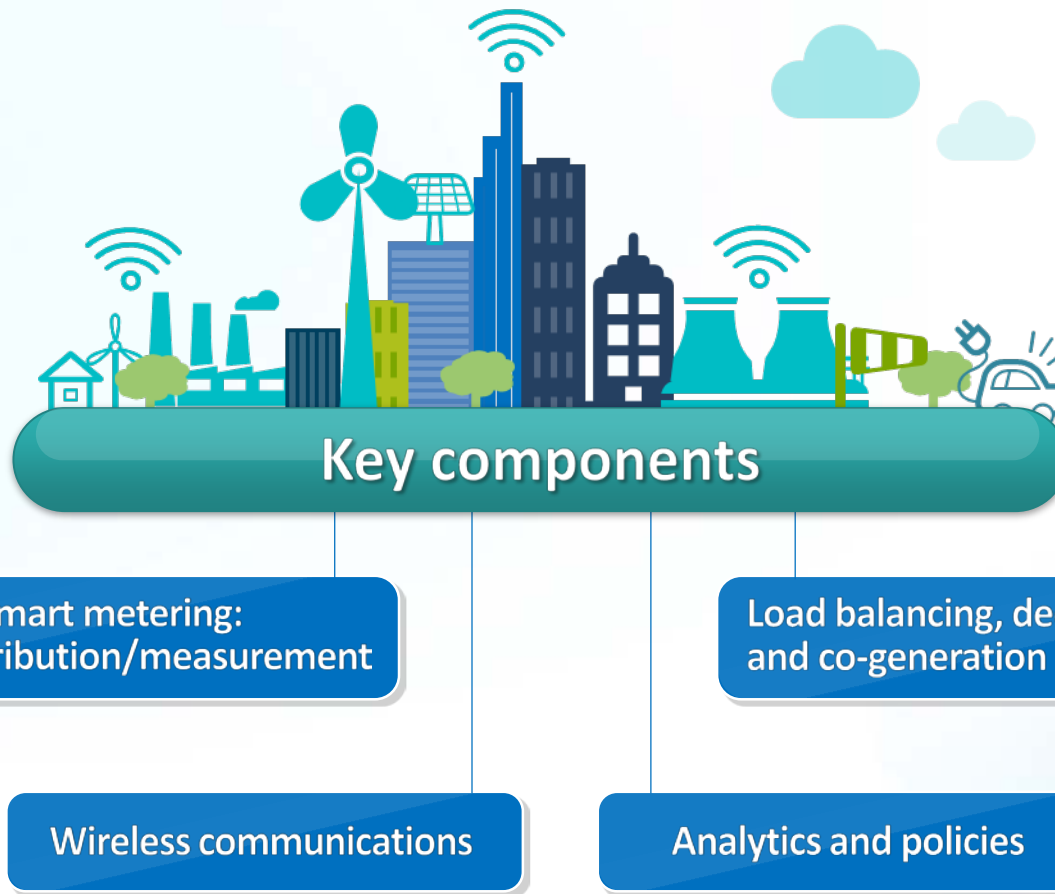
Source : Navigant research

Smart Building Integration

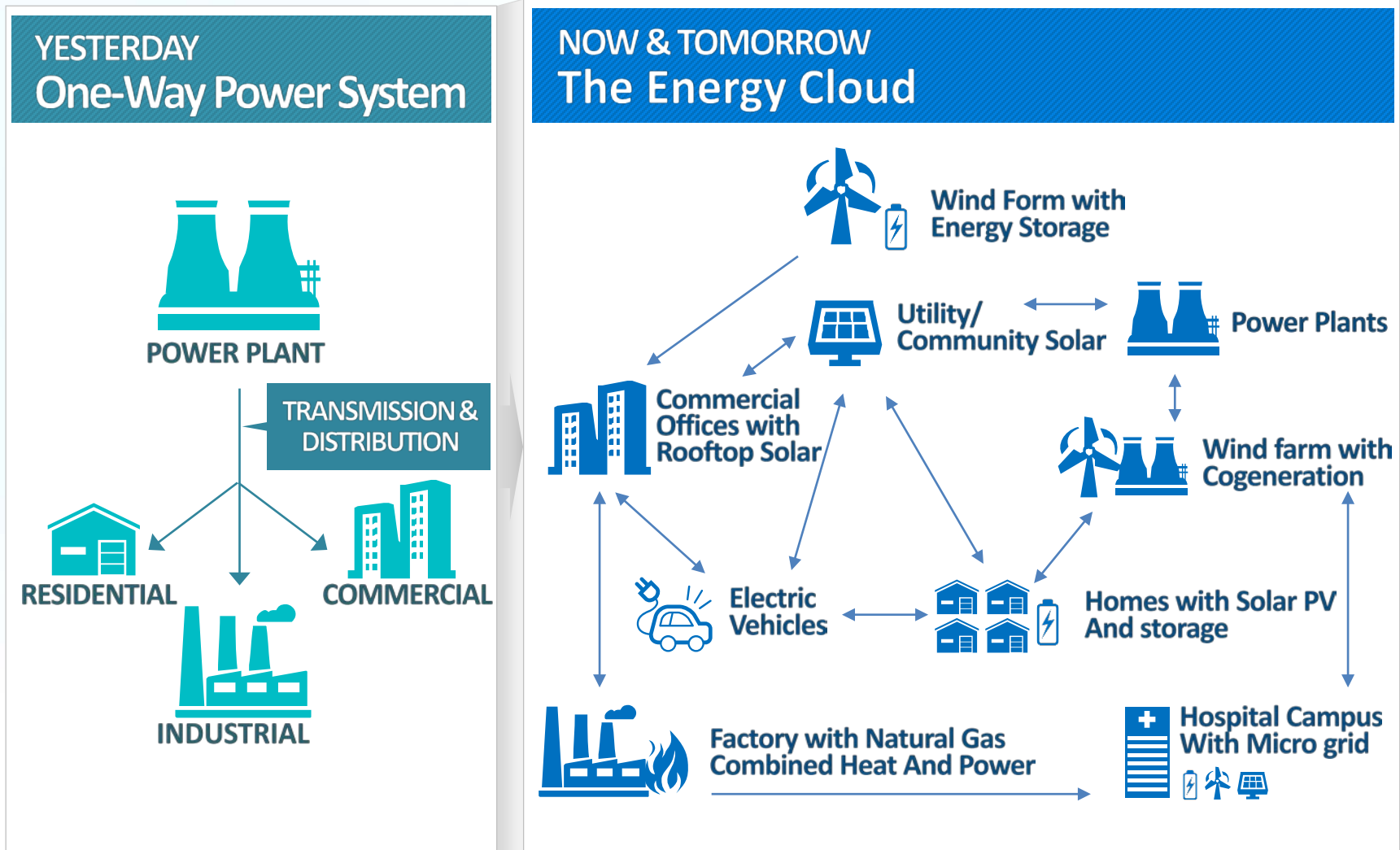


A day in Smart Building





The Energy Cloud



Source : Navigant Consulting

Smart Mobility



MRT in Singapore



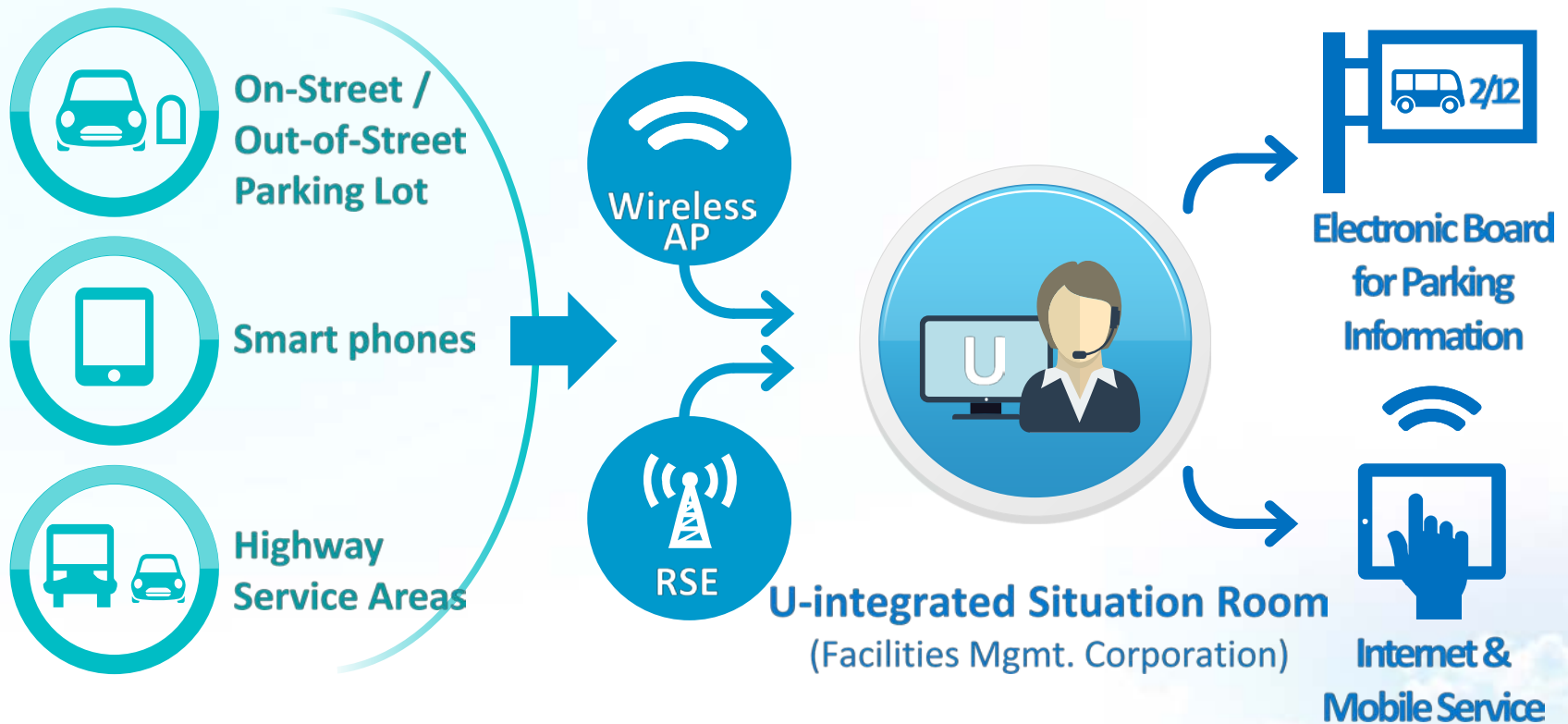
BRT in Istanbul



Intelligent Transport System



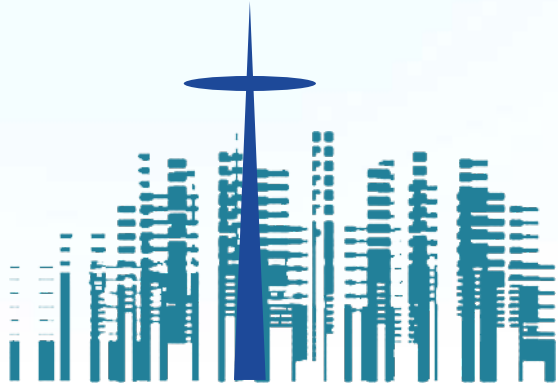
ITS in Korea





The enabling technology:

ICT

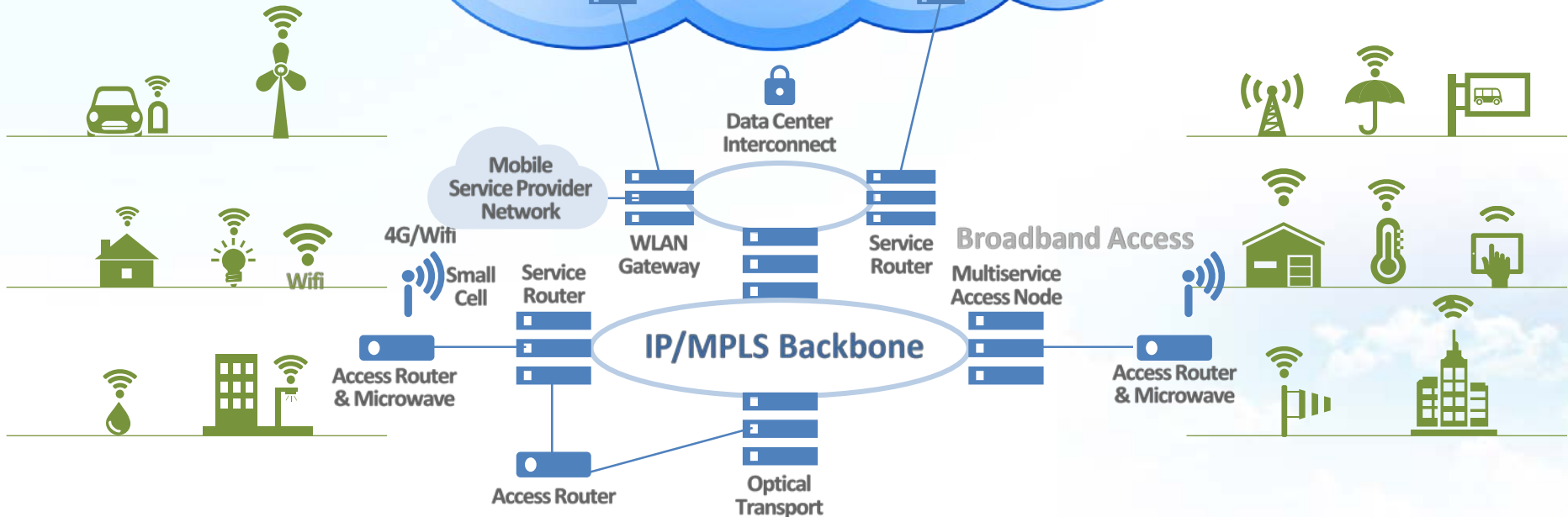
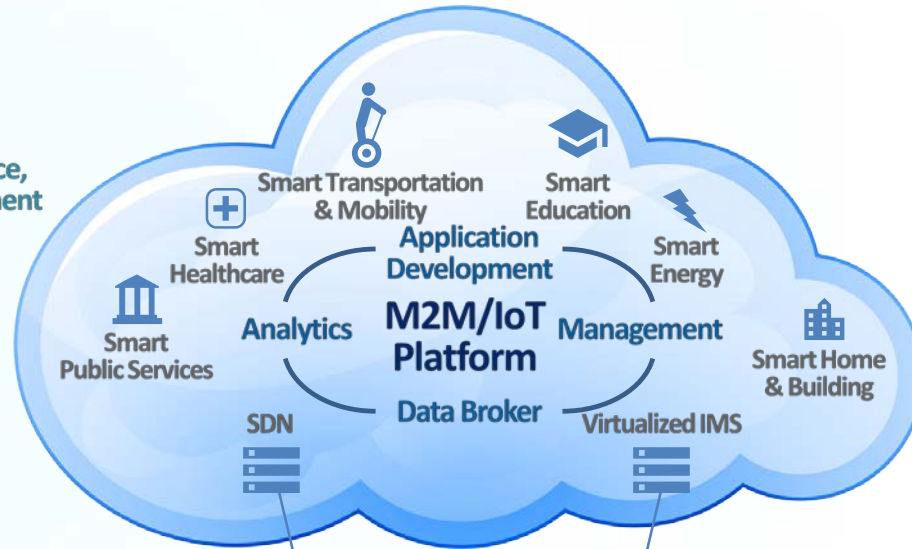


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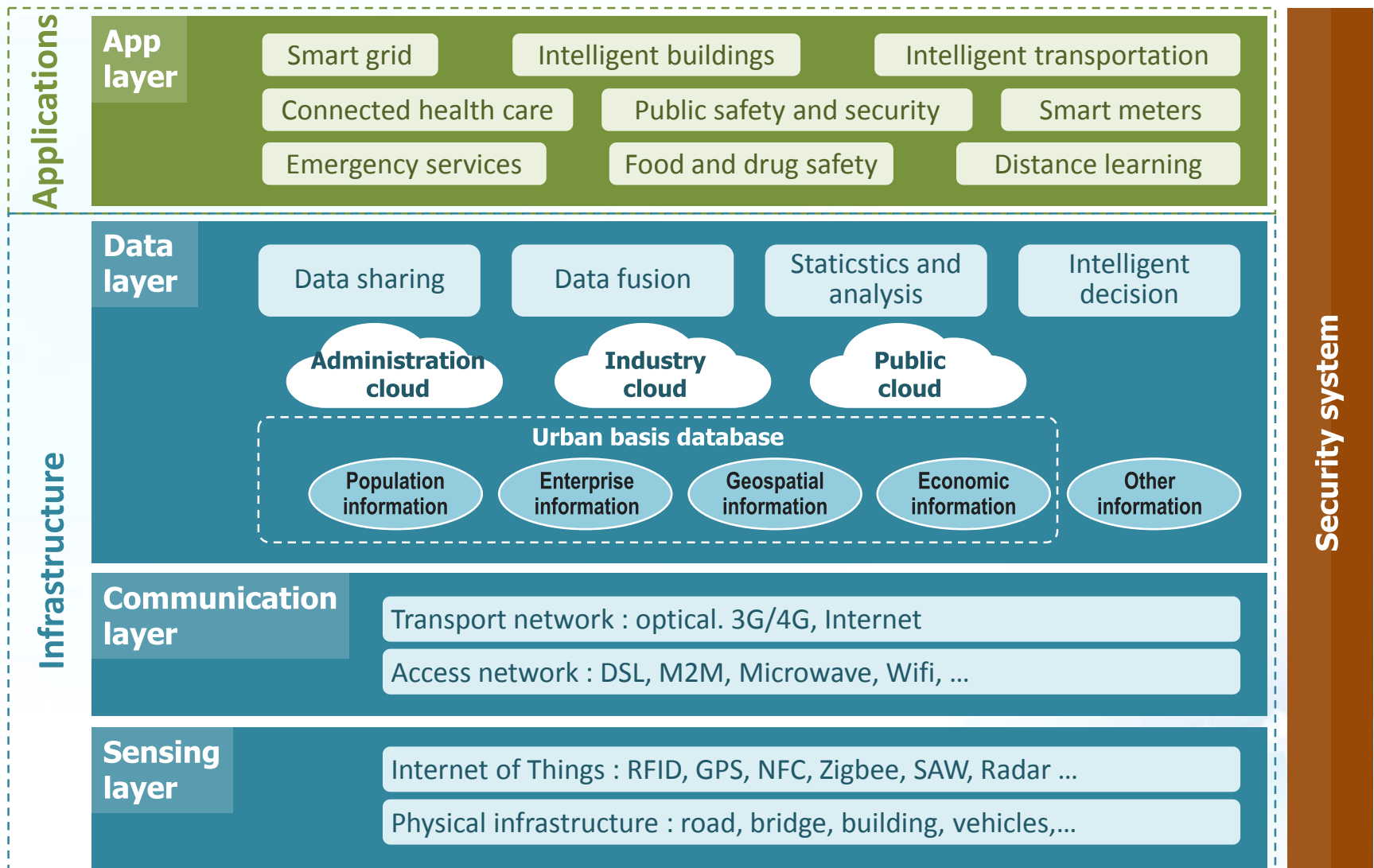
IoT(Sensor)/ Broadband



Context Aware Sensor, Device, Network & Service Management



ICTs as the enabler of Smart cities



※ Source : ITU



Global Cases of Smart City

- EU
- US
- Korea
- Singapore
- China
- India



Main Goal

Reduce traffic, save energy and improve public safety



Amsterdam

Mobypark, homes with smart energy meters,
smart traffic management



Barcelona

irrigation system(real-time data for watering),
emergency system to reach the incident without delay

City of San José, CA + Intel Corporation

Use Case 1: Downtown Events & Air Pollution



Data Stream
Correlations



Improving Traffic Flow
and Parking

Use Case 2: Sustainable Traffic Planning



Smarter Travel Road,
Bike & Trail Planning
and Monitoring



Public Notifications

Use Case 3: Air Quality in Planned Development



Growth for Urban
villages



Local air quality data as
an Urban Planning Tool

City Government Defined Use Cases

Smart Cities in Korea



Busan

- Intelligent traffic mgmt. service
- IoT based disaster safety service
- Smart crosswalk
- Missing child prevention service on the beach



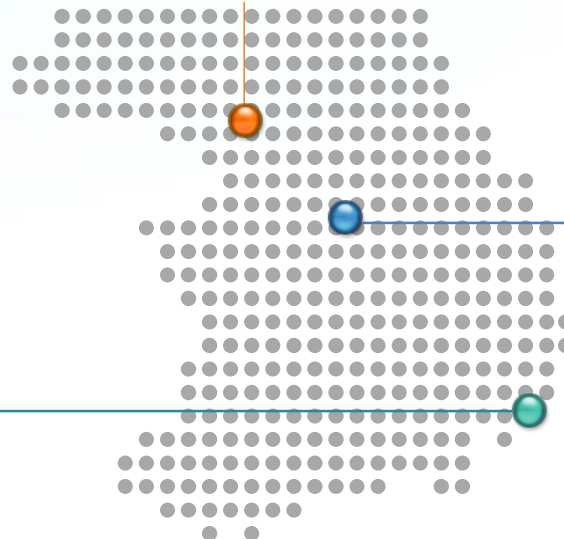
Daegu

- IoT based healthcare service
- Customized healthcare service
- Global healthcare center
- Automatic alarming in emergency for senior citizens living alone



Sejong

- Smart School(Electronic bulletin boards, table PC, automatic text messaging for checking students' arrival & departure in school)
- Smart Farm(Control of ventilators of green houses with smartphones)





Smart Mobility

1 million

Cars on the road in
Singapore
(approximately)



- Real-time transport information
- Self-driving vehicles
(Trial for 6 kilometers)
- Contactless mobile payment



Smart Energy



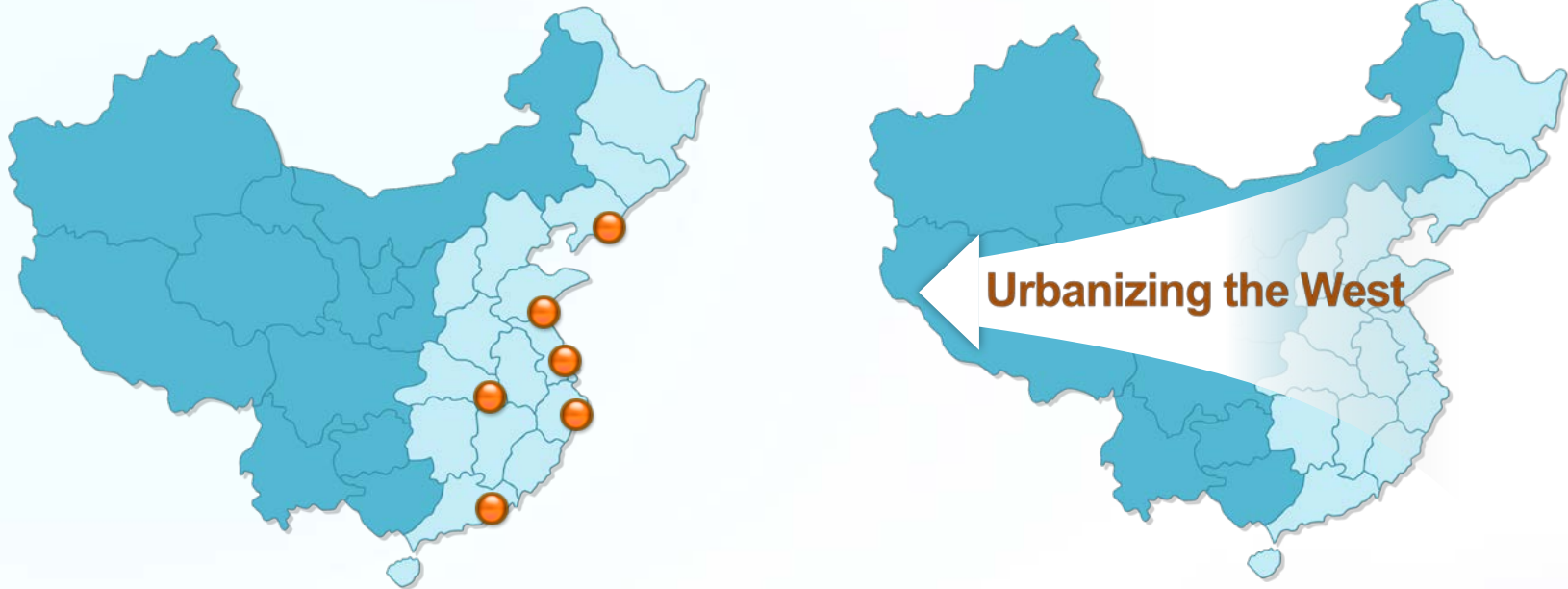
2015



2050

- Smart Grid system
- Smart street lighting

China's New Urban Planning



With Smart City, Bypass the problems of Urbanization

- The East Smart Cities → The West Urbanization
- Create Domestic Market of 300 million people through smart city

Smart Cities India 2015



843 million

People will living in Indian
cities by 2050

100 new cities

Will be developed by Government
of India, with plans to transform satellite
towns and existing cities

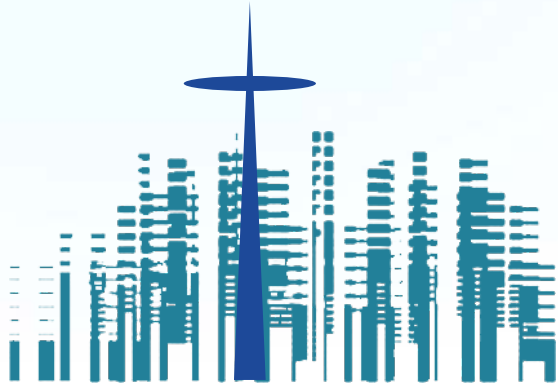
Competition

20 top scorers out of
100 potential smart cities were chosen
for financing during 2015-16



Prerequisites for Smart City

- Financing Solutions
- Interoperability
- Data Security
- Human Resource Skills
- Cooperation



1. Financing solutions



2. Interoperability

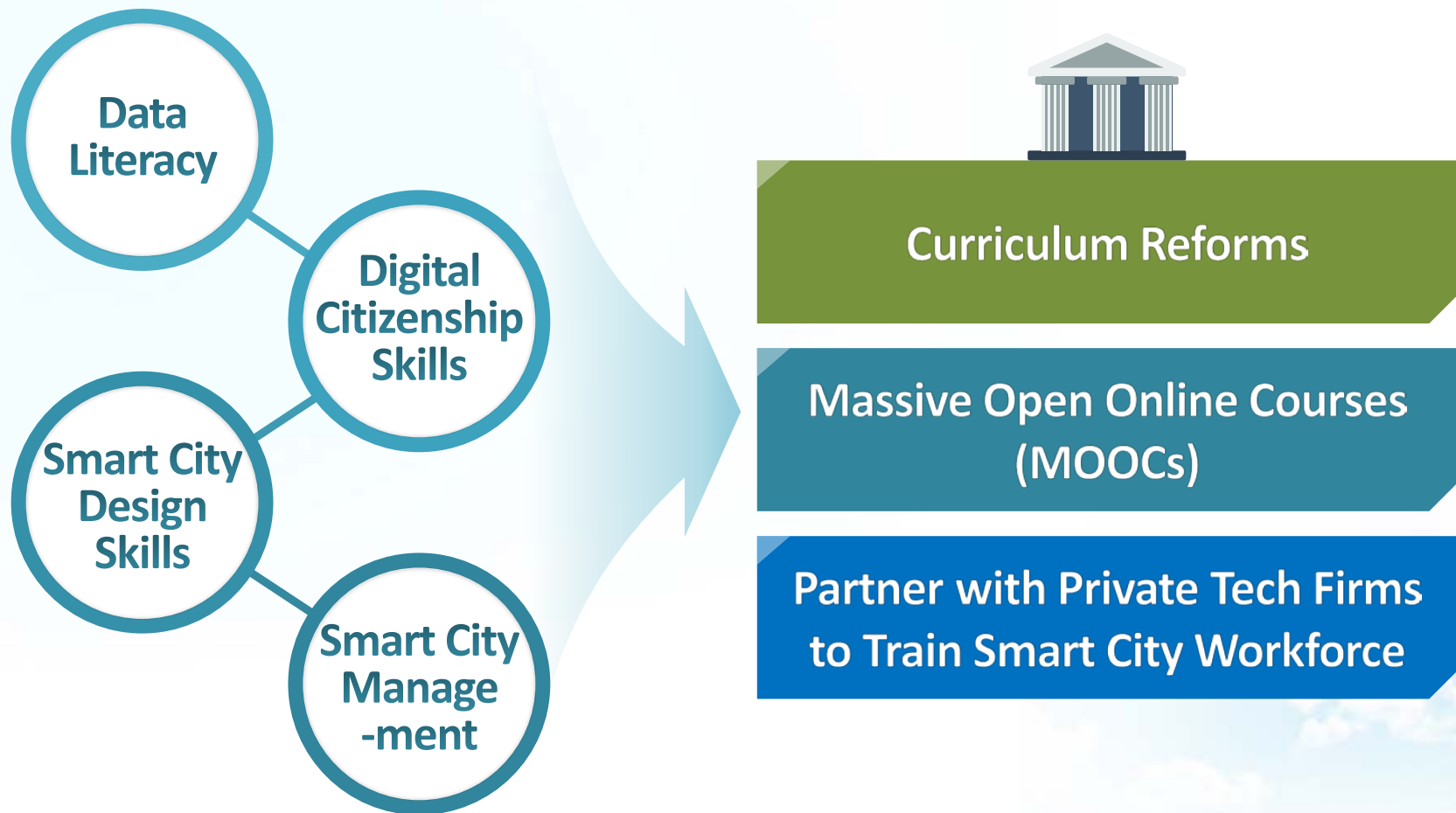


Create unified Standards

Build open architecture systems

Leverage existing assets

4. Human Resource Skills



5. Cooperation

Control tower among Ministries

Max efficiency
out of
well-balanced
physical
construction &
ICT technology



Cooperation

Global Cooperation

- ITU, ISO, WTO :
global standards & cross-
border transfer of info
- WeGO :
Smart government
cooperation among
cities(centered in Seoul)

Smart City is a question of **when not **if**.**

- IDC(International Data Corporation)